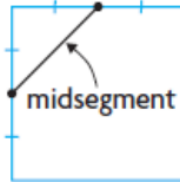


## 7.4 and 7.5 - Reasoning About Properties of Polygons

**Midsegment** - a line connecting the midpoints of two adjacent sides of a polygon.

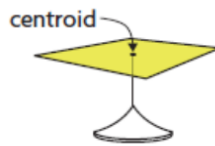
(beside)



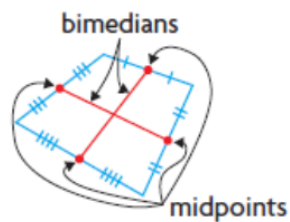
**Median** - the line drawn from a vertex of a triangle to the midpoint of the opposite side.



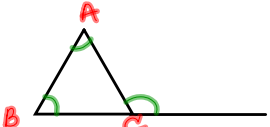
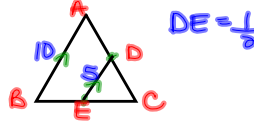
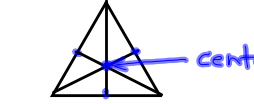
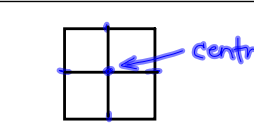
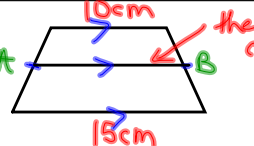
**Centroid** - the centre of an object's mass; the point at which it balances; also known as the centre of gravity.



**Bimedian** - the line joining the midpoints of two opposite sides in a quadrilateral.



**Key Points**

<p>The exterior angle at a vertex of a triangle equals the sum of the two interior angles opposite it.</p>	
<p>The length of the midsegment in a triangle equals half the length of the side opposite it.</p>	 <p><math>DE = \frac{1}{2} AB</math></p>
<p>The centroid of a triangle is located at the intersection of its median.</p>	 <p>centroid</p>
<p>The centroid of a quadrilateral is located at the intersection of its bimedians. <i>Not a kite or a trapezoid.</i></p>	 <p>centroid</p>
<p>The <b>bimedian</b> of the non-base sides of a trapezoid is parallel to its bases. Its length is the mean of both the top and bottom bases.</p>	 <p>10cm 15cm</p> <p>the bimedian cuts the trapezoid exactly in half.</p>

$$AB = \frac{10+15}{2} = 12.5 \text{ cm}$$

**Complete:** p. 413 - 414 #1, 4, 5.